MECHANICS

Research Communications

Volume 18, 1991

LIST OF CONTENTS AND AUTHOR INDEX

List of Contents to Volume 18, 1991

MECHANICS RESEARCH COMMUNICATIONS

1991 Vol. 18, No. 1

CONTENTS

Scientific and Applied Communications

E. RATHAKRISHNAN, T.J. IGNATIUS and C. RAJU — 1 — An Experimental Study of Suddenly Expanded Rectangular Jet Flow Field

P. CHAUVAT — 11 — Summational Invariants in Discrete Kinetic Theory with Multiple Collisions

G.G. TIVANOV — 17 — Experimental Investigation of the ρ-Layer Phenomenon

ALAN T. ZEHNDER — 23 — A Model for the Heating Due to Plastic Work

D.M. HAUGHTON — 29 — An Exact Solution for the Stretching of Elastic Membranes Containing a Hole or Inclusion

R. PILTNER — 41 — Three-Dimensional Stress and Displacement Representations for Plate Problems

L.G. HECTOR, Jr. — 51 — A Theory of Growth Instability During the Early Stages of Metal Casting

Y.F. DAFALIAS — 61 — Constitutive Model for Large Viscoelastic Deformations of Elastomeric Materials

A. BAGHDASARIAN — 67 — Comments on the Validity of a Proposed Counter-Example on the Method of Decomposition

BASANT KUMAR JHA and RAVINDRA PRASAD — 71 — MHD Free-Convection Flow Past an Exponentially Accelerated Vertical Plate

Announcements

10 — First U.S. National Congress on Computational Mechanics, Chicago, July 21-24, 1991

40 — 11th ABCM Mechanical Engineering Conference Sao Paulo, Brazil, December 11-13, 1991

50 — 18th International Congress of Theoretical and Applied Mechanics, Haifa, Aug. 22-28, 1992

77 — EUROMECH Meetings, 1991

MECHANICS RESEARCH COMMUNICATIONS

1991 Vol. 18, Nos. 2/3

CONTENTS

Scientific and Applied Communications

C.Y. WANG 81 Pressure Crushing of a Rigid Perfectly Plastic Tube

FRANCO BAMPI and CLARA ZORDAN 87 Solving Snell's Law

PETER J. SHOPOV and IVAN B. BAZHLEKOV 95 Unsteady Motion of Type-A Deformable Compound Drop

ARDÉSHIR GURAN and R.P.J. RIMROTT 105 Dynamic Stability of a Block Rolling on a Cylinder Allowing for Rotatory Inertia Effects

E.G. LADOPOULOS 111 Non-Linear Integro-Differential Equations Used in Orthotropic Shallow Spherical Shell Analysis

P. CAPODANNO 121 Sur Le Problème des Vibrations de Deux Liquides Non Miscibles dans un Container en Apesanteur

L. DRAGOS 129 Subsonic Flow Past a Thin Airfoil in a Wind Tunnel

M. FARID GOLNARAGHI 135 Vibration Suppression of Flexible Structures Using Internal Resonance

B. OESTERLÉ, B. DINH TRI and J.L. VIAL 145 Measurements of Lift and Torque on a Rotating Sphere at Intermediate Reynolds Numbers

Announcements

94 Call for IUTAM Symposia

120 18th Int. Congress of Theoretical and Applied Mechanics, Haifa, August 22-28, 1992

MECHANICS RESEARCH COMMUNICATIONS

1991 Vol. 18, No. 4

CONTENTS

Scientific and Applied Communications

M. KUMARI, H.S. TAKHAR and G. NATH 151 Vorticity Interaction in a Two-Dimensional Unsteady Stagnation Flow with an Applied Magnetic Field

PEILIN SONG and XINGRUI MA 157 Orthogonality of the Tangent Space and Normal Space and Its Application in the Dynamics of the Constrained System

J.C. ELICER-CORTÉS and DOAN-KIM-SON 167 Turbulent Natural Convection in a Dihedral Enclosure - Influence of the Angle and the Temperature Walls on the Mean Velocity Field

E. KITA and N. KAMIYA 177 A New Adaptive Boundary Mesh Refinement Based on Simple Algorithm

NING JIE 187 An Endochronic Constitutive Theory of Material under Nonproportional Cyclic Loadings

R. SRIKANTH and E. RATHAKRISHNAN 199 Flow through Pipes with Sudden Enlargement

VICTOR BIRMAN 207 Temperature Effect on Shear Correction Factor

K.Y. LAM, S.P. PHUA and B. COTTERELL 213 Multiple Cracks Interaction Effect in Brittle Material

B.N. MANDAL and N.K. GHOSH 221 A Note on the Cylindrical Wave-Maker Problem in the Presence of Surface Tension

S.I. VOROPAYEV and Ya. D. AFANASYEV 227 Self-Similar Solution for the Flow Induced by a Source/Sink in a Viscous Rotating Fluid

Announcements

176 Twenty-Second Midwestern Mechanics Conference, Rollo, Missouri, October 6-9, 1991

220 Third Greek National Congress on Mechanics (HSTAM), Athens, June 27-29, 1992

MECHANICS RESEARCH COMMUNICATIONS

1991 CONTENTS Vol. 18, No. 5

Scientific and Applied Communications

NENGQUAN LIU and NICHOLAS J. ALTIERO — 233 Multiple Cracks and Branch Cracks in Finite Plane Bodies

T. LEWINSKI — 245 Effective Stiffnesses of Cylindrical Shells of Periodic Structure

Z. WANG — 253 The Deflection of an Infinite Standard Linear Solid Plate Resting on a Substratum under Line Loading

A.K. KAW — 261 Cauchy Singular Integral Equations with Logarithmically Singular Integrands in Solid Mechanics

M.R. SHANBHAG and S.K. MAITI — 269 FE Computation of Order of Singularity at the Edges of Bimaterial Tubular Lap Joints

H. HABDELMOULAH, G. MARTIN, J.C. DUPRÉ and A. LAGARDE — 277 Tension-Relaxation Paper Test Using Speckle Method and Automatic Data Processing

A. GURAN, X. TONG and F.P.J. RIMROTT — 287 Instabilities in a Spinning Axi-symmetric Rigid Satellite

WOJCIECH BLAJER — 293 Contribution to the Projection Method of Obtaining Equations of Motion

J.R. CLERMONT and M.E. DE LA LANDE — 303 On the Use of the Stream Tube Method in Relation to Apparition of Secondary Flows in Plane and Axisymmetric Geometries

PETER J. SHOPOV and PETER D. MINEV — 311 Unsteady Interaction of Two Deformable Drops

GIACOMO CAVIGLIA and ANGELO MORRO — 319 General Behaviour of Inhomogeneous Waves at Interfaces

Announcements

260 IUTAM/CISM, Second International Summer School on Mechanics, Udine, Italy, September 1991

276 Society of Engineering Science, 28th Annual Technical Meeting, Gainsville, Florida, November 1991

286 International Workshop on Technology for Hong Kong's Infrastructure Development, Hong Kong, December 1991

292 SECTAM, Southeastern Conference on Theoretical and Applied Mechanics, Nashville, April 1992

302 Sixth Japan - United States Conference on Composite Materials, Orlando, Florida, June 1992

318 PACAM III, Pan American Congress of Applied Mechanics, São Paulo, Brazil, January 1993

MECHANICS RESEARCH COMMUNICATIONS

1991 CONTENTS Vol. 18, No. 6

Scientific and Applied Communications

O.-L. OLAOSEBIKAN	327	On Crack Stability in a Thermoelastic Body
M. KULKARNI and T. BELYTSCHKO	335	On the Effect of Imperfections and Spatial Gradient Regularization in Strain Softening Viscoplasticity
R. SRIKANTH and E. RATHAKRISHNAN	345	Digital Moire Interferometry in Experimental Analysis of Compressible Flows
V. RUAS	359	Variational Approaches to the Two-Dimensional Stokes System in Terms of the Vorticity
A.K. DHAR and K.P. DAS	367	Stability of Small but Finite Amplitude Interfacial Waves
Y.Y. YU	373	On Equations for Large Deflections of Elastic Plates and Shallow Shells
G.A. ROGERSON	385	Dynamic Response of an Eight-Ply Composite Plate to an Impulsive Line Load
K. CHANDRASHEKHARA and B.S. KUMAR	395	Analysis of a Thick Orthotropic Cylindrical Shell Panel
C. LEE and M.K. CHUNG	403	Secondary Flow Loss and Deviation Models for Through-Flow Analysis of Axial Flow Turbomachinery
FRANCOIS HILD and STÉPHANE ROUX	409	Fatigue Initiation in Heterogeneous Brittle Materials
B. SAINT-GUILY	415	The Conservation Theorems of H. Ertel and a General Identity Implicitly Containing Them
WOO-SEUNG KIM and L.G. HECTOR, Jr.	419	The Influence of Temporal Pulse Profile on Hyperbolic Heat Conduction in Materials Subjected to Repetitively Pulsed Laser Radiation
CESAR MENDOZA	429	Transitional Sediment Concentration Profiles
S.I. VOROPAYEV and Ya. D. AFANASYEV	435	Steady Horizontal Jet in a Stratified Fluid

Announcements

344	Symposium on High Performance Computing for Flight Vehicles, Washington, D.C., December 1992
441	CISM 1990 Report
445	Contents and Author Index of Vol. 18, 1991